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masking device based on the rod assembly 14A shown in figure 7. When this masking is used once, arrays of linear contiguous protrusions are formed, and then by rotating the masking and irradiating again, it is possible to produce independent two-stage protrusions shown in Figure 19.

Please replace the paragraph beginning at page 28, line 17, with the following rewritten paragraph:

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In overall summary, the micro-protrusions presented in the present invention are unique because of the inclusive angle of contact of the upright surface is limited to be in a range between 80-110 degrees, depending on the application requirements. This range of angles is effective in preventing biting of foreign debris in the inclusion space and sticking of the sliding surfaces. The use of the fast atomic beam has been the key factor which enabled for the first time selection of the contact angle of the upright surfaces.

<u>In the Claims:</u>

Kindly cancel claims 1-18.

Kindly add the following new claims 19-49.

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19. (New) A method of, during the manufacture of a slider member to be used in sliding relation to an other member, forming micro-protrusions on or micro-cavities in a surface of a substrate from which is formed said slider member, in a manner to reduce sticking between said surface and the other member and to reduce entrapment of foreign particles therebetween, said method comprising:

placing said substrate in a process chamber;

supporting a mask member in front of said surface of said substrate, said mask member comprising a plurality of fine wire or rod members disposed in contact with or in proximity of said substrate surface; and

irradiating fast atomic beams through said mask member onto said surface of said substrate, and thereby forming said micro-protrusions or said micro-cavities, said forming comprising controlling said irradiating such that each micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110° to an intended direction of sliding of said slider member relative to the other member and to said surface of said substrate.

20. (New) A method as claimed in claim 19, wherein said slider member comprises a magnetic disc or a magnetic head.

21. (New) A method as claimed in claim 19, wherein said surface of the substrate comprises carbon, SiO_2, ceramic material, nickel-plated layer, or glass.

22. (New) A method of, during the manufacture of a slider member to be used in sliding relation to an other member, forming into micro-protrusions on or micro-cavities in a surface of a substrate from which is formed said slider member, in a manner to reduce sticking between said surface and the other member and to reduce entrapment of foreign particles therebetween, said method comprising:

placing said substrate in a process chamber;

supporting a mask member in front of said surface of said substrate, said mask member having a micro shielding configuration and not being integral with said substrate; and

irradiating fast atomic beams through said mask member onto said surface of said substrate,

said irradiating comprising directing said fast atomic beams from a beam source at an angle of incidence determined by an angle of inclination measured with respect to a rotation axis normal to said surface of said substrate, and rotating one of said beam source and said substrate about said rotation axis relative to the other of said beam source and said substrate, thereby forming said micro-protrusions or said micro-cavities, said forming comprising controlling said irradiating such that each micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110° to an intended direction of sliding of said slider member relative to the other member and to said surface of said substrate.

23. (New) A method as claimed in claim 22, wherein. said slider member comprises a magnetic disc or a magnetic head.

24. (New) A method as claimed in claim 22, wherein said surface of the substrate comprises carbon, SiO_2, ceramic material, nickel-plated layer, or glass.

25. (New) A method of, during the manufacture of a slider member to be used in sliding relation to an other member, forming micro-protrusions on or micro-cavities in a surface of a substrate from which is formed said slider member, in a manner to reduce sticking between said surface and the other member and to reduce entrapment of foreign particles therebetween, said method comprising;

placing said substrate in a process chamber; and

irradiating fast atomic beams through said mask member onto said surface of said substrate, and said irradiating comprises a first irradiation operation of irradiating said fast atomic beams through a first mask member comprising parallel wires or rods disposed adjacent to said surface of said substrate, and a second irradiation operation of irradiating said fast atomic beams through a second mask member comprising parallel wires or rods disposed adjacent to said surface of said substrate and extending at an angle to a direction of extension of said parallel wires or rods of said

first mask member, thereby forming said micro-protrusions or said micro-cavities, said forming comprising controlling said irradiating such that each micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110° to an intended direction of sliding of said slider member relative to the other member and to said surface of said substrate.

26. (New) A method as claimed in claim 25, wherein said slider member comprises a magnetic disc or a magnetic head.

27. (New) A method as claimed in claim 25, wherein said surface of the substrate comprises carbon, SiO_2, ceramic material, nickel-plated layer, or glass.

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28. (New) A method of, during the manufacture of a slider member to be used in sliding relation to another member, forming micro-protrusions on or micro-cavities in a surface of a substrate from which is formed said slider member, in a manner to reduce sticking between said surface and the another member and to reduce entrapment of foreign particles therebetween, said method comprising:

placing said substrate in a process chamber;

supporting a mask member in front of said surface of said substrate, said mask member having a micro shielding configuration and not being integral with said substrate; and

irradiating fast atomic beams through said mask member onto said surface of said substrate, and thereby forming said micro-protrusions or said micro-cavities, said forming comprising controlling said irradiating such that each said micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110° to an intended direction of sliding of said slider member relative to the another member and to said surface of said substrate,

wherein said irradiating comprises directing said fast atomic beams from a beam source at an angle of incidence determined by an angle of inclination measured with respect to a rotation axis normal to said surface of said substrate, and rotating one of said beam source and said substrate about said rotation axis relative to the other of said beam source and said substrate.

29. (New) A method as claimed in claim 28, wherein a portion of said substrate forming said surface thereof comprises an electrically insulating layer.

30. (New) A method as claimed in claim 29, wherein said electrically insulating layer comprises a protective layer covering a magnetic layer formed on said substrate.

31. (New) A method as claimed in claim 30, wherein said protective layer is made of carbon, SiO_2, or ceramic material.

32. (New) A method as claimed in claim 28, wherein a portion of said substrate forming said surface thereof comprises a nickel-plated layer.

33. (New) A method as claimed in claim 28, wherein a portion of said substrate forming said surface thereof comprises glass.

34. (New) A method as claimed in claim 28, wherein said irradiating comprises directing said fast atomic beams substantially at a right angle onto said surface of said substrate.

35. (New) A method as claimed in claim 28, wherein said forming comprising controlling said irradiating such that each said micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110, to an intended direction of sliding of said slider member relative to the another member and to said surface of said substrate.

36. (New) A method as claimed in claim 35, wherein said angle is from approximately 90° to approximately 110°.

37. (New) A method as claimed in claim 35, wherein said angle is from approximately 80° to approximately 90°.

38. (New) A method as claimed in claim 35, wherein said angle is substantially 90°.

39. (New) A method as claimed in claim 28, wherein said mask member comprises micro-objects dispersed on said surface of said substrate.

40. (New) A method as claimed in claim 39, wherein said micro-objects comprise micro-particles of powder.

41. (New) A method as claimed in claim 39, wherein said micro-objects are formed from at least one material selected from the group consisting of alumina, carbon, $Si_3 N_4$, SiC, TiN, ZrO_2, MgO and synthetic resin.

42. (New) A method as claimed in claim 39, wherein said micro-objects are susceptible to etching by said fast atomic beams.

43. (New) A method as claimed in claim 39, wherein said micro-objects are not susceptible to etching by said fast atomic beams.

44. (New) A method as claimed in claim 28, wherein said mask member comprises a plurality of fine wire or rod members disposed adjacent said surface of said substrate.

45. (New) A method as claimed in claim 44, wherein said plurality of wire or rod members extend parallelly.

46. (New) A method as claimed in claim 44, wherein said plurality of wire or rod members are arranged to form a matrix.

47. (New) A method as claimed in claim 28, wherein said mask member comprises a plate member having therein a pattern of cavities and disposed adjacent said surface of said substrate.

48. (New) A method as claimed in claim 28, wherein said irradiating comprises a first irradiation operation of irradiating said fast atomic beams through a first mask member in the form of parallel wires or rods disposed adjacent to said surface of said substrate, and a second irradiation operation of irradiating said fast atomic beams through a second mask member in the form of parallel wired or rods disposed adjacent to said surface of said substrate and extending at an angle to a direction of extension of said parallel wires or rods of said first mask member.

49. (New) A method as claimed in claim 28, wherein said micro-protrusions or micro-cavities have a height or depth of approximately 10nm.